CLAIMS

What is claimed is:

1. A method for improving performance of a program, comprising:

providing a call to a clone of a function from which the clone is created;

the function representing programming code performing a task for the program;

generating information mapping the clone to the function;

at link time for the program, if no function body of the clone is accessible by a linker, then the linker using the information mapping the clone to the function to satisfy a linker's requirement; and

at load time for the program, if no function body of the clone is accessible by a loader, then the loader, based on the information mapping the clone to the function, allowing selection of a body of the function; and if the body of the clone is accessible by the loader, then the loader allowing selection of the body of the clone.

2. The method of claim 1 wherein a call to the function is substituted by the call to the clone of the function.

3. The method of claim 2 wherein a compiler substitutes the call to the function by the call to the clone of the function.

4. The method of claim 1 wherein the mapping information is included in an annotation section of the object of the program.

5. The method of claim 1 wherein a compiler generates the mapping information.

6. The method of claim 1 wherein the mapping information is stored in the loadable note section for use by the loader.

7. The method of claim 1 wherein the body of the clone for use by the call to that clone is selected from a list of bodies based on a priority.

8. The method of claim 1 wherein the function has more than one clone in the program.

9. The method of claim 1 wherein the clone is associated with a flag identifying the clone as a function clone.

10. The method of claim 1 wherein symbol resolution of the clone is delayed to the load time for the program based on a linkage entry provided by the linker.

11. The method of claim 1 wherein a name representing the clone includes one or a combination of a condition for cloning and a name representing the function.

12. The method of claim 1 wherein the body of the clone is included in a library for use by the program.

13. The method of claim 1 wherein a compiler creates the body of the clone based on a programming statement provided to the compiler.

14. The method of claim 1 wherein the compiler creates the body of the clone after an analysis determining advantages and disadvantages of such creation.

15. The method of claim 1 wherein the clone is created based on one or a combination of:

a logical relationship between at least two parameters passed to the function;

an alias-relationship between at least two parameters passed to the function;

a value of at least one parameter passed to the function from; and

a number of alignment bytes of at least one parameter passed to the function.

16. The method of claim 1 wherein the clone is created based on profile data of the function.

17. A method for using a clone cloned from a function in a program, comprising:

using information mapping the clone to the function to satisfy a linker's requirement of having a clone body for a call to the clone; the linker's requirement being part of building the program; and

building a library that includes the body of the clone;

wherein the function represents programming code performing a task for the program and building the program and the library are independent of one another.

18. The method of claim 17, prior to building the library that includes the body of the clone, comprising building the library that does not include the body of the clone.

19. The method of claim 17 wherein the call to the clone has replaced a call to the function.

20. The method of claim 17 wherein the clone is created based on information passed to the function.

21. A method for using a clone cloned from a section of code of a program, comprising:

substituting a call to the section of the code by a call to the clone;

at link time for the program, mapping the clone to the section of code;

at load time for the program, mapping the clone to the section of code; and

during execution of the program, if a body of the clone is available in a library used by the program, then using that body, else if the body of the clone is not available in the library, then using the section of code from which the clone is cloned.

22. The method of claim 21 being implemented as program instructions stored in a computer-readable medium.

23. A system for using a clone cloned from a function in a program, comprising:

means for mapping the clone to the function to satisfy a linking requirement of having a clone body for a call to the clone; the linking requirement being part of building the program; and

means for building a library that includes the body of the clone;

wherein the function represents programming code performing a task for the program, and building the program and the library are independent of one another.

24. The system of claim 23 wherein the clone is created based on information passed to the function.

25. A computer-readable medium embodying instructions for performing a method for improving performance of a program, the method comprising:

providing a call to a clone of a function from which the clone is created; the function representing programming code performing a task for the program;

generating information mapping the clone to the function; and

creating the clone based on one or a combination of

a logical relationship between at least two parameters passed to the function;

an alias-relationship between at least two parameters passed to the function;

a value of at least one parameter passed to the function from; and

a number of alignment bytes of at least one parameter passed to the function.

26. The computer-readable medium of claim 25 wherein:

at link time for the program, if no function body of the clone is accessible by a linker, then the linker using the information mapping the clone to the function to satisfy a linker's requirement; and

at load time for the program, if no function body of the clone is accessible by a loader, then the loader, based on the information mapping the clone to the function, allowing selection of a body of the function; and if the body of the clone is accessible by the loader, then the loader allowing selection of the body of the clone.

27. The computer-readable medium of claim 25 wherein the program includes multiple calls to multiple clones.